

Amendments to and Listing of the Claims:

Please amend claims 1-3, 7 and 10, cancel claims 4-6 and add new claim 22, so that the claims read as follows:

1. (Currently Amended) A method of forming a polysilicon layer in a semiconductor device, comprising:
 - providing a substrate;
 - forming an oxide layer over the substrate;
 - depositing a first silicon layer over the oxide layer, wherein the first silicon layer comprises microcrystalline polysilicon, wherein the step of depositing a first silicon layer is performed with a low pressure chemical vapor deposition in the presence of a reactive gas containing silicon and a carrier gas, and wherein the reactive gas containing silicon is selected from the group consisting of SiH_4 , SiH_2Cl_2 , SiD_4 , SiD_2Cl_2 , SiDCl_3 , SiHCl_3 , SiD_3Cl , and SiH_3Cl ;
 - depositing an amorphous silicon layer over the first silicon layer; and
 - annealing the amorphous silicon layer to form a polysilicon layer.
2. (Currently Amended) The method as claimed in claim 1, wherein the step of ~~forming~~ depositing a first silicon layer is performed at a furnace temperature of about 500°C to 700°C.
3. ((Currently Amended) The method as claimed in claim 1, wherein the step of ~~forming~~ depositing a first silicon layer is performed at a furnace pressure between about 0.2 m torr and 5 torr.
- 4-6. (Cancelled)
- 19 ~~7~~ ¹⁸ (Currently Amended) The method as claimed in claim ~~[[6]]~~ ²², wherein the flow rate of the carrier gas is about 100 sccm to 5,000 sccm.
- 4 ~~8~~ (Original) The method as claimed in claim 1, wherein the first silicon layer has a thickness of about 50 to 2,000 angstroms.

5 ~~9.~~ (Original) The method as claimed in claim 1, wherein the amorphous silicon layer has a thickness of about 100 to 2,000 angstroms.

6 ~~10.~~ (Currently Amended) A method of forming a flash memory cell, comprising:
providing a substrate;
forming an oxide layer over the substrate;
forming a polysilicon floating gate over the oxide layer including
providing a bottom seed layer having microcrystalline polysilicon,
providing an upper amorphous silicon layer over the bottom seed layer,
and
annealing the upper amorphous silicon layer;
providing an inter-poly dielectric layer over the polysilicon floating gate; and
forming a polysilicon control gate over the inter-poly dielectric layer.

original

7 ~~11.~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the step of providing a bottom seed layer is performed at a furnace temperature of about 500°C to 700°C.

8 ~~12.~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the step of providing a bottom seed layer is performed with a single wafer low pressure chemical vapor deposition at a chamber temperature of about 650°C to 750°C.

9 ~~13.~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the step of providing a bottom seed layer is performed at a furnace pressure of between about 0.2 m torr and 5 torr.

10 ~~14.~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the step of providing a bottom seed layer is performed with a single wafer low pressure chemical vapor deposition at a pressure of about 50 torr to 500 torr.

11 ~~15~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the deposition of the bottom seed layer is performed with a low pressure chemical vapor deposition in the presence of a reactive gas containing silicon and a carrier gas.

12 ~~16~~ (Original) The method as claimed in claim ~~15~~¹¹, wherein the reactive gas containing silicon is selected from the group consisting of SiH_4 , SiH_2Cl_2 , SiD_4 , SiD_2Cl_2 , SiDCl_3 , SiHCl_3 , SiD_3Cl , and SiH_3Cl .

13 ~~17~~ (Original) The method as claimed in claim ~~16~~¹², wherein the flow rate of the reactive gas containing silicon is about 20 sccm to 1,600 sccm.

14 ~~18~~ (Original) The method as claimed in claim ~~15~~⁶¹, wherein the carrier gas is selected from the group consisting of H_2 , D_2 and D_3 .

15 ~~19~~ (Original) The method as claimed in claim ~~18~~¹⁴, wherein the flow rate of the carrier gas is about 100 sccm to 5,000 sccm.

16 ~~20~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the bottom seed layer has a thickness of about 50 to 2,000 angstroms.

17 ~~21~~ (Original) The method as claimed in claim ~~10~~⁶, wherein the upper amorphous silicon layer has a thickness of about 100 to 2,000 angstroms.

18 ~~22~~ (New) A method of forming a polysilicon layer in a semiconductor device, comprising:

providing a substrate;

forming an oxide layer over the substrate;

depositing a first silicon layer over the oxide layer, wherein the first silicon layer comprises microcrystalline polysilicon, wherein the step of depositing a first silicon layer is performed with a lower pressure chemical vapor deposition in the presence of a reactive gas

Application No. 10/715,558

Reply to Office Action of December 23, 2004

containing silicon and a carrier gas, and wherein the carrier gas is selected from the group

consisting of H_2 , D_2 and D_3 ;

depositing an amorphous silicon layer over the first silicon layer; and

annealing the amorphous silicon layer to form a polysilicon layer.